

MATERIAL SAFETY DATA SHEET

1. SUBSTANCE AND SOURCE IDENTIFICATION

National Institute of Standards and Technology
Standard Reference Materials Program
100 Bureau Drive, Stop 2320
Gaithersburg, Maryland 20899-2320

SRM Number: 2806a
MSDS Number: 2806a
SRM Name: Medium Test Dust (MDT)
in Hydraulic Fluid

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Description: SRM 2806 consists of a polydisperse, irregularly-shaped mineral dust suspended in approximately 400 mL of hydraulic fluid at a nominal concentration of 2.8 mg/L. SRM 2806 is provided as a two bottle set.

Substance: Medium Test Dust (MTD) in Hydraulic Fluid

Other Designations: Medium Test Dust (MTD) in Hydraulic Fluid (Mobil AERO HFA¹; aviation hydraulic fluid; hydrotreated light naphthenic petroleum distillate)

2. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

Component	CAS Number	EC Number (EINECS)	Nominal Concentration (%)
Hydraulic Fluid	64742-53-6	265-156-6	100

3. HAZARDS IDENTIFICATION

NFPA Ratings (Scale 0–4): Health = 2 Fire = 1 Reactivity = 0

Major Health Hazards: Skin irritation, cancer hazard in humans.

Physical Hazards: Not applicable.

Potential Health Effects

Inhalation: No information on significant adverse effects.

Skin Contact: Irritation, skin disorders.

Eye Contact: Irritation.

Ingestion: Digestive disorders, aspiration hazard.

Listed as a Carcinogen/Potential Carcinogen:

	Yes	No
In the National Toxicology Program (NTP) Report on Carcinogens		X
In the International Agency for Research on Cancer (IARC) Monographs	X	
By the Occupational Safety and Health Administration (OSHA)		X

¹Identification of certain commercial materials in this MSDS does not imply recommendation or endorsement by the National Institute of Standards and Technology, nor does it imply that the materials are necessarily the best available for the purpose.

4. FIRST AID MEASURES

Inhalation: If adverse effects occur, remove to uncontaminated area. Give artificial respiration, if not breathing, by qualified personnel. Get immediate medical attention.

Skin Contact: Rinse affected area with copious amounts of water for at least 15 minutes while removing contaminated clothing. Get medical attention, if needed.

Eye Contact: Immediately flush eyes, including under the eyelids, with copious amounts of water for at least 15 minutes. Get immediate medical attention.

Ingestion: Get immediate medical attention. **DO NOT** induce vomiting. If vomiting occurs, keep head lower than hips to prevent aspiration. Give artificial respiration, if not breathing, by qualified personnel.

5. FIRE FIGHTING MEASURES

Fire and Explosion Hazards: Slight fire hazard.

Extinguishing Media: Regular dry chemical, carbon dioxide, water, and regular foam.

Fire Fighting: Move container from fire area if it can be done without risk. **DO NOT** scatter spilled material with high-pressure water streams. Use extinguishing agents appropriate for surrounding fire. Avoid inhalation of material or combustion by-products. Wear full protective clothing and NIOSH-approved self-contained breathing apparatus (SCBA).

Flash Point (°C): 92 (198 F) **Autoignition (°C):** Not applicable **Method:** ASTM D-93

Flammability Limits in Air (Volume %) → Upper: 7; **Lower:** 0.9

Flammability Class (OSHA): IIIB

6. ACCIDENTAL RELEASE MEASURES

Occupational Release: Stop leak if possible without personal risk. Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for proper disposal. Keep unnecessary people away, isolate hazard area and deny entry. Refer to Section 13, "Disposal Considerations".

7. HANDLING AND STORAGE

Storage: Refer to "Handling and Use" in the SRM 2806 Certificate of Analysis. Keep containers tightly closed when not in use. Store in a cool, dry, well ventilated area away from heat. Store away from strong oxidizing agents and combustible materials. Approved respiratory protective equipment must be used when vapor or mists concentrations exceed applicable standards. Wear splash resistant safety goggles. Wear chemical resistant clothing and gloves. An eye wash station and washing facilities should be readily available near handling and use areas.

Safe Handling Precautions: See Section 8, "Exposure Controls and Personal Protection".

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits: Hydrotreated Light Naphthenic Distillate (Mineral Oil Mist)

OSHA (TWA):	5 mg/m ³
ACGIH (TWA):	5 mg/m ³
ACGIH (STEL):	10 mg/m ³
NIOSH (TWA/10 h):	5 mg/m ³
NIOSH (STEL):	10 mg/m ³
OES UK (TWA):	5 mg/m ³
OES UK (STEL):	10 mg/m ³

Ventilation: Use local exhaust ventilation system. Ensure compliance with applicable exposure limits.

Respirator: If necessary, refer to the “NIOSH Guide to the Selection and Use of Particulate Respirators Certified under 42 CFR 84” for selection and use of respirators with organic vapor cartridges certified by NIOSH.

Eye Protection: Wear safety goggles. **DO NOT** wear contact lenses in the laboratory. An eye wash station should be readily available near areas of use.

Personal Protection: Wear protective clothing and chemically resistant gloves to prevent skin exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Hydrotreated Light Naphthenic Distillate
Appearance and Odor: red oil; mild odor
Relative Molecular Mass: not applicable
Boiling Point (°C): 154
Specific Gravity (water=1): 0.85
Viscosity (@ 40 °C, cSt) : 13.8
Water Solubility (@ 15 °C): negligible

10. STABILITY AND REACTIVITY

Stability: X Stable Unstable

Stable at normal temperatures and pressure.

Conditions to Avoid: Avoid heat, flames, sparks, and other sources of ignition. Avoid contact with incompatible materials.

Incompatible Materials: Oxidizing materials.

Fire/Explosion Information: See Section 5, “Fire Fighting Measures”.

Hazardous Decomposition: Thermal decomposition or combustion produces aldehydes, ketones, oxides of carbon.

Hazardous Polymerization: Will Occur X Will Not Occur

11. TOXICOLOGICAL INFORMATION

Route of Entry: X Inhalation X Skin X Ingestion

Toxicity Data: Rat, Oral LD₅₀: > 2000 mg/kg
Rat, Dermal LD₅₀: > 2000 mg/kg
Rat, Inhalation: Not established

Health Effects (Acute and Chronic): Prolonged repeated skin contact with low viscosity materials may defat the skin resulting in possible irritation and dermatitis. Repeated or prolonged contact with mineral oils may cause conjunctivitis. See Section 3: “Hazards Identification” for potential health effects.

Carcinogen Status (IARC): Human Sufficient Evidence; Animal Sufficient Evidence, Group 1 (Untreated and mildly treated oils). Mildly hydrotreated oils principally paraffinic in nature, induced a moderate incidence of skin tumors.

12. ECOLOGICAL INFORMATION

Environmental Summary: Environmental impact and effects not established.

13. DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with all applicable federal, state, and local regulations. Keep out of sewers and water supplies.

14. TRANSPORTATION INFORMATION

U.S. DOT and IATA: Combustible Liquid; UN Number: N/A; Hazard Class: N/A; Packing Group: N/A.

Canadian Transportation: Not classified.

15. REGULATORY INFORMATION

U.S. Regulations

CERCLA Sections 102a/103 (40 CFR 302.4): Not regulated.

SARA Title III Section 302 (40 CFR 355.30): Not regulated.

SARA Title III Section 304 (40 CFR 355.40): Not regulated.

SARA Title III Section 313 (40 CFR 372.65): Not Regulated.

OSHA Process Safety (29 CFR 1910.119): Not regulated.

SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21):

ACUTE:	Yes
CHRONIC:	Yes
FIRE:	No
REACTIVE:	No.
SUDDEN RELEASE:	No

State Regulations

California Proposition 65: Not regulated

Canadian Regulations

WHMIS Classification: Not determined.

EC Regulations

Classification (assigned):

T. Carcinogen Category 2.

Risk Phrases:

R45. May cause cancer.

Safety Phrases:

S45. In case of accident or if you feel unwell, seek immediate medical advice (show the label where possible).

S53. Avoid exposure and obtain special instructions before use.

National Inventory Status

U.S. Inventory (TSCA): Listed on inventory.

TSCA 12(b), Export Notification: Not listed.

16. OTHER INFORMATION

Sources: MDL Information Systems, Inc., MSDS *Hydrotreated Light Naphthenic Distillate*, 18 September 2003.
Fluid Technologies, Inc., MSDS *Mobil Aero HFA*, 09 February 2000.

Disclaimer: Physical and chemical data contained in this MSDS are provided only for use as a guide in assessing the hazardous nature of the material. The MSDS was prepared carefully, using current references; however, NIST does not certify the data in the MSDS. The certified values for this material are given in the NIST Certificate of Analysis.